Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently amended) A thermal imaging system for quantitative thermal mapping of a scene containing at least one target object, the system comprising:

a thermal imaging device for detection of radiation emitted by the scene, the thermal imaging device comprising a focal plane array (FPA) detector having a plurality of detectors arranged in an array that includes a first subset of detectors having fewer than all of the detectors in the FPA and a remainder of other detectors;

a first heat source of known temperature and emissivity, located within the scene viewed by the thermal imaging device; and

a processor adapted to generate a calibrated temperature map of the scene from the data supplied by the thermal imaging device, by determining a correction based on the known temperature of the first heat source and detected radiation data from ~~a first~~ the first subset of detectors ~~that includes fewer than all of the detectors in the FPA,~~ which first subset receives radiation from the first heat source while ~~other~~ the remainder of other detectors in the FPA ~~receive~~ receives radiation from other portions of the scene at the same time, and applying the correction to detected radiation data supplied by the FPA to thereby generate the calibrated temperature map.

2. (Original) A thermal imaging system according to claim 1 which further comprises a second heat source of known temperature and emissivity, located within the scene viewed by the thermal imaging device and wherein the processor is adapted to generate the calibrated temperature map from the data supplied by the thermal imaging device, based on the known temperatures of both the first and the second heat sources.

3. (Previously presented) A thermal imaging system according to claim 1 which further comprises means for measuring the temperature of the heat source and communicating the temperature to the processor.

4. (Previously presented) A thermal imaging system according to claim 3 wherein the temperature of the heat source is measured by a contact sensor.

5. (Previously presented) A thermal imaging system according to claim 3 wherein the temperature of the heat source is measured by an infrared thermometer.

6. (Previously presented) A thermal imaging system according to claim 1 wherein the temperature of the heat source is adjustable by electronic means.

7. (Previously presented) A thermal imaging system according to claim 6 wherein the temperature of the heat source is adjustable by resistance heating means.

8. (Previously presented) A thermal imaging system according to claim 6 wherein the temperature of the heat source is adjustable by a device operating on the Peltier principle.

9. (Previously presented) A thermal imaging system according to claim 1 wherein the control of the heat source is effected by electronic circuitry local to that heat source.

10. (Previously presented) A thermal imaging system according to claim 9 wherein a set-point temperature for control of the heat source is communicated from the processor to the electronic circuitry local to that heat source.

11. (Previously presented) A thermal imaging system according to claim 1 wherein a temperature range of the thermal imaging device is adjustable by the processor.

12. (Previously presented) A thermal imaging system according to claim 11 wherein the temperature range is adjustable by the processor in accordance with the known temperature of the heat source.

13. (Canceled).

14. (Previously presented) A thermal imaging system according to claim 1 wherein the FPA detector is an un-cooled FPA detector.

15. (Previously presented) A thermal imaging system according to claim 1 wherein the FPA comprises thermal detectors.

16. (Original) A thermal imaging system according to claim 15 wherein the thermal detectors are bolometers.

17. (Previously presented) A thermal imaging system according to claim 1 which further comprises means for maintaining the temperature of the FPA detector at close to room temperature.

18. (Original) A thermal imaging system according to claim 17 wherein the temperature of the FPA detector is maintained by means of a device operating on the Peltier principle.

19. (Previously presented) A thermal imaging system according to claim 1 wherein the FPA detector is cased in a protective housing.

20. (Previously presented) A thermal imaging system according to claim 1 wherein the heat source has a surface finish substantially identical to that of an object of primary interest in the scene.

21. (Previously presented) A thermal imaging system according to claim 1 wherein the heat source comprises at least a portion of an object forming part of the scene to be thermally mapped.

22. (Original) A thermal imaging system according to claim 21 wherein the temperature of the object is monitored using at least a contact thermometer fitted to the object.

23. (Previously presented) A thermal imaging system according to claim 1 wherein the heat source is a black body source.

24. (Previously presented) A thermal imaging system according to claim 1 wherein the system is adapted to identify temperature variations in at least part of a target object within the scene, the target object being a living subject.

25. (Original) A thermal imaging system according to claim 24, wherein the living subject is a human.

26. (Original) A thermal imaging system according to claim 25, wherein the part of the target object is a hand, foot or face.

27. (Currently amended) A method of generating a quantitative thermal map of a scene containing at least one target object, the method comprising:

positioning a first heat source of known temperature and emissivity within the scene;

~~imaging the scene using a thermal imaging device; and~~

detecting radiation emitted by the scene using a thermal imaging device for detection of radiation emitted by the scene, the thermal imaging device comprising a focal plane array (FPA) detector having a plurality of detectors arranged in an array that includes a first subset of detectors having fewer than all of the detectors in the FPA and a remainder of other detectors; and

generating a calibrated temperature map of the scene, by determining a correction based on the known temperature of the first heat source and detected radiation data from ~~a first~~ the first subset of detectors ~~that includes fewer than all of the detectors in the FPA~~, which first subset receives radiation from the first heat source while ~~other~~ the remainder of other detectors in the FPA ~~receive~~ receives radiation from other portions of the scene at the same time, and applying the correction to data supplied by the thermal imaging device.

28. (Original) A method according to claim 27 further comprising positioning a second heat source of known temperature and emissivity within the scene and generating the calibrated temperature map of the scene based on the known temperatures of both heat sources.

29. (Currently amended) A method of generating a quantitative thermal map of a scene, the method comprising:

selecting at least part of an object in the scene, of known emissivity;

measuring the temperature of the at least part of an object, the at least part of an object acting as a first heat source;

imaging the scene using a thermal imaging device for detection of radiation emitted by the scene, the thermal imaging device comprising a focal plane array (FPA) detector having a plurality of detectors arranged in an array that includes a first subset of detectors having fewer than all of the detectors in the FPA and a remainder of other detectors; and

generating a calibrated temperature map of the scene, by determining a correction based on the known temperature of the first heat source and detected radiation data from ~~a first~~ the first subset of detectors ~~that includes fewer than all of the detectors in the FPA~~, which first subset receives radiation from the first heat source while ~~other~~ the remainder of other detectors in the FPA ~~receive~~ receives radiation from other portions of the scene at the same time, and applying the correction to detected radiation data supplied by the FPA.

30. (Previously presented) A method according to claim 29 further comprising selecting a second at least part of an object in the scene of known emissivity, measuring its temperature such that it acts as a second heat source, and determining the correction based further on the known temperature of the second heat source and detected radiation data from a second subset of the detectors in the FPA, which second subset receives radiation from the second heat source.

31. (Previously presented) A method according claim 29 which further comprises monitoring the temperature of the heat source and communicating the temperature (s) to a processor.

32. (Previously presented) A method according to claim 29 further comprising identifying temperature variations in at least part of a target object within the scene, the target object being a living subject.

33. (Original) A method according to claim 32, wherein the living subject is a human.

34. (Original) A method according to claim 33, wherein the part of the target object is a hand, foot or face.

35. (Previously presented) A method according to claim 32 wherein the method further comprises issuing a signal if the measured temperature of the subject is in excess of a threshold.

36. (Original) A method according to claim 35, wherein the method is repeated for a number of different living subjects so as to distinguish those with an elevated body temperature with respect to those exhibiting a normal body temperature.

37. (Previously presented) A method according to claim 29 which further comprises communicating a set-point temperature to the heat source, and thereby controlling the temperature of the heat source.

38. (Previously presented) A method according to claim 29 which further comprises controlling a temperature range, of the thermal imaging device, in accordance with the temperature of the heat source.

39. (Previously presented) A method according to claim 27 which further comprises monitoring the temperature of the heat source and communicating the temperature (s) to a processor.

40. (Previously presented) A method according to claim 27 further comprising identifying temperature variations in at least part of a target object within the scene, the target object being a living subject.

41. (Previously presented) A method according to claim 40, wherein the living subject is a human.

42. (Previously presented) A method according to claim 41, wherein the part of the target object is a hand, foot or face.

43. (Previously presented) A method according to claim 40 wherein the method further comprises issuing a signal if the measured temperature of the subject is in excess of a threshold.

44. (Previously presented) A method according to claim 43, wherein the method is repeated for a number of different living subjects so as to distinguish those with an elevated body temperature with respect to those exhibiting a normal body temperature.

45. (Previously presented) A method according to claim 27 which further comprises communicating a set-point temperature to the heat source, and thereby controlling the temperature of the heat source.

46. (Previously presented) A method according to claim 27 which further comprises controlling a temperature range, of the thermal imaging device, in accordance with the temperature of the heat source.

47. (Previously presented) A thermal imaging system according to claim 1 wherein the first heat source and the at least one target object are located alongside each other within the scene, such that any atmospheric absorption occurring between the first heat source and the thermal imaging device is substantially the same as any occurring between the at least one target object and the thermal imaging device.

48. (Previously presented) A thermal imaging system according to claim 1 wherein the scene corresponds to the field of view of the thermal imaging device.

49. (Previously presented) A thermal imaging system according to claim 1 wherein the correction is applied to detected radiation data from each of the detectors in the FPA which receives radiation from the scene.

50. (Previously presented) A thermal imaging system according to claim 2 wherein the correction is further based on the known temperature of the second heat source and detected radiation data from a second subset of the detectors in the FPA, which second subset receives radiation from the second heat source.

51. (Previously presented) A thermal imaging system according to claim 1 wherein the temperature of the first heat source is known independently of the thermal imaging device.

52. (Previously presented) A thermal imaging system according to claim 2 wherein the temperature of the second heat source is known independently of the thermal imaging device.

53. (Previously presented) A method according to claim 27 wherein the first heat source and the at least one target object are located alongside each other within the scene, such that any atmospheric absorption occurring between the first heat source and the thermal imaging device is substantially the same as any occurring between the at least one target object and the thermal imaging device.

54. (Previously presented) A method according to claim 27 wherein the scene corresponds to the field of view of the thermal imaging device.

55. (Previously presented) A method according to claim 27 wherein the correction is applied to detected radiation data from each of the detectors in the FPA which receives radiation from the scene.

56. (Previously presented) A method according to claim 28 wherein the correction is further based on the known temperature of the second heat source and detected radiation data from a second subset of the detectors in the FPA, which second subset receives radiation from the second heat source.

57. (Previously presented) A method according to claim 27 wherein the temperature of the first heat source is known independently of the thermal imaging device.

58. (Previously presented) A method according to claim 28 wherein the temperature of the second heat source is known independently of the thermal imaging device.

59. (Previously presented) A method according to claim 29 wherein the temperature of the first heat source is known independently of the thermal imaging device.

60. (Previously presented) A method according to claim 30 wherein the temperature of the second heat source is known independently of the thermal imaging device.